BORING NO.	AD-1a	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/3/2002	Inspector	Mark Cruickshank
Date Completed	10/3/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	958.5 MSL
Time	1615	Bottom Sample Elevation	955.5 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny, 80° F	Location	N 466994.163
			E 1342993.927

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0	WATER						
1.5							
2.0				1			
2.5			15	1			0 ppm
3.0	SILTY CLAY - light grey, high moisture, very soft, silt -15%, clay - 85%, increased density	CL	1		SS-1a	Оррии	
3.5	and plasticity with depth			1		(1645)	
4.0			15	1			0 ppm
 4.5			10	1			о ррпп
5.0	Total Depth = 4.5 ft.						
5.5							
6.0							
6.5							
- 7.0							
_ 7.5							
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	AD-1b	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/4/2002	Inspector	Mark Cruickshank
Date Completed	10/4/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	958.5 MSL
Time	0800	Bottom Sample Elevation	950.5 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny, 65° F	Location	N 466933.630
			E 1343064.041

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes			
0.5										
1.0	WATER									
1.5										
				0						
2.5			10	0			0 ppm			
3.0				0			- FF			
3.5	CLAYEY SILT - grey, high moisture, very soft, abundant organic material (sticks,	ML		0						
 4.0	leaves) from 2-2.5'	IVIL		0						
			15	0			0 ppm			
5.0				0			о ррпп			
 5.5				0		SS-1b				
 				0		(0830)				
6.5						75	0			0 ppm
- 7.0	CLAY - greenish grey, high moisture, soft,	СН	73	0			о ррпп			
7.5	high plasticity	CIT		0						
8.0				0						
8.5			95	0			0 ppm			
9.0	SILTY SAND - greenish grey, high moisture, loose, poorly graded, silt - 15%, sand - fine	SM	90	1			о ррііі			
	grained - 75%	SIVI		1						
10.0	Total Depth = 9.5 ft.									

BORING NO. AD-1c Drilling Firm North Park Lake Driller Project Date Started 10/4/2002 Inspector Date Completed 10/4/2002 Surface Elevation Drill Type Hollow Stem Auger Top Sample Elevation Bottom Sample Elevation Time 0845 2" X 2' Split Spoon Sunny 65° F Sample Method Datum for Surface El. Weather Location

	Pennsylvania Drilling
	Bill Minor
	Mark Cruickshank
	960 MSL
	957 MSL
n	948 MSL
	NOAH
	N 467069.991
	E 1343551.028

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results									
0.5																	
1.0																	
1.5	WATER																
2.0																	
2.5																	
3.0																	
3.5				0													
4.0			75	0	AD-1c		0 ppm	%w = 101.5									
4.5				0	(0900)		о рр										
5.0				0													
_{5.5}			75	0	AD-1c												
— _{6.0}				0			0 ppm	%w = 84.9									
6.5	CLAY - greenish grey, high moisture		CI	CI	CI	CI	CI	CI	CI	CI	CL	75	0	(0910)		Оррпі	70W = 04.5
- 7.0	content, very soft, low plasticity	OL		0													
7.5				0		SS-1c, PS- 1, TS-1											
8.0			75	0	AD-1c	(0930)	0 ppm	%w = 53.2									
8.5			75	1	(0920)		о ррпі	70W = 55.2									
9.0				0													
9.5				1			0 ppm, TS-	%w = 23.6; LiquidLimit =									
10.0			75	0			1 VOC	24%; Plastic									
10.5			75	1	AD-1c		sample collected at	Limit = 18%; Plasticity									
	SILTY SAND - greenish grey, high moisture, very loose, poorly graded, clay -	SM		0	(0930)		10.5'	Index = 8%; Specific									
11.5	21% silt- 34% sand - fine-med grained -	SIVI		1			0.55	Gravity = 2.66; and									
12.0	170/0			1			0 ppm	Organic Content = 2%									
	Total Depth = 12 ft.																

BORING NO.	AD-1d	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/3/2002	Inspector	Mark Cruickshank
Date Completed	10/3/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	957 MSL
Time	1650	Bottom Sample Elevation	950 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny, 80° F	Location	N 466980.713
			E 1343100.291

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes					
0.5												
1.0												
1.5	WATER											
2.0												
2.5												
3.0												
3.5	ORGANIC DEBRIS - sticks, leaves	OL		0								
4.0			10	0			0 ppm					
4.5				0								
5.0				0								
5.5				0								
6.0								10	0	·		0 ppm
6.5	CLAY - greenish grey, high moisture, very							0	·	SS-1d		
7.0	soft, moderate plasticity	СН		0		(1730)						
7.5				0								
8.0			85	0			0 ppm					
8.5				0								
9.0				0								
9.5			85	0			0 ppm					
10.0				0			- r.F					
10.5	Total Depth = 10 ft.											

BORING NO. AD-2a Drilling Firm Pennsylvania Drilling Project North Park Lake Driller Bill Minor Date Started 10/7/2002 Inspector Mark Cruickshank **Date Completed** 10/7/2002 Surface Elevation 960 MSL Drill Type Hollow Stem Auger Top Sample Elevation 957 MSL Time 0850 Bottom Sample Elevation 947 MSL Datum for Surface El. Sample Method 2" X 2' Split Spoon NOAH Weather Cloudy 50° F Location N 467182.520 E 1343490.424

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5	WATER							
_ 2.0								
_ 2.5								
3.0								
3.5				0				
4.0			10	0	AD-2a		0 ppm	%w = 68
 4.5				0	(0910)		5 FF	
5.0				0				
5.5				0				
6.0			20	0	AD-2a (0915)	0 ppm	0 ppm	%w = 68.9
6.5				0				
⁻ 7.0				0				
	CLAY - greenish grey, high moisture, slight			0				
_{8.0}	plasticity, increased plasticity, density with	CL	25	0	AD-2a	SS-2a	0 ppm	%w = 78.4
8.5	depth, moderate plasticity at 4.5', 4" clayey sand layer at 9'			0	(0920)	(0950)	ο pp	
9.0				0				
9.5				0				
10.0			95	0	AD-2a		0 ppm	%w = 47.58
10.5				0	(0935)			
11.0				0				
— 11.5				0				
_{12.0}			95	0	AD-2a		0 ppm	%w = 22.3
12.5				0	(0940)		O PPIII	
13.0				0				
13.5	Total Depth = 13 ft.							

BORING NO.	AD-2b	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/7/2002	Inspector	Mark Cruickshank
Date Completed	10/7/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	956 MSL
Time	1010	Bottom Sample Elevation	947 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Cloudy 50° F	Location	N 467269.990
			E 1343521.979

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes																	
_{0.5}																								
1.0																								
1.5																								
2.0	WATER																							
2.5																								
3.0																								
3.5																								
4.0																								
4.5				0																				
5.0			10	0	•		0 ppm																	
5.5				0																				
6.0				0																				
6.5				0																				
7.0					CI.	CI	CI	CL	CI	CI										10	0	0		0 ppm
7.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with											0												
8.0	depth	CL		0																				
8.5				0		SS-2b (1050)																		
9.0			95	0			0 ppm																	
9.5				0																				
10.0				1																				
10.5				1																				
11.0			95	1			0 ppm																	
11.5				3																				
12.0	CLAYEY SAND - light brown, high moisture, loose, poorly graded, clay - 25%, sand - fine	SC		5																				
13.0	grained - 75%		95	5			0 ppm																	
	Total Depth =13 ft.																							

BORING NO.	AD-2c	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/7/2002	Inspector	Mark Cruickshank
Date Completed	10/7/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	956 MSL
Time	1112	Bottom Sample Elevation	946 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Cloudy 50° F	Location	N 467309.111
			E 1343823.506

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0	WATER							
2.5								
3.0								
3.5								
4.0								
4.5				0				
_{5.0}			15	0	AD-2c		0 ppm	%w = 81.1
5.5			10	0	(1120)		Орріп	7011 - 01.1
6.0				0				
6.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with			0	AD-2c			
7.0			15	0			0.000	%w = 72.6
7.5		CL	15	0	(1125)		0 ppm	76W = 72.0
8.0	depth	CL		0				
8.5				0	- AD-2c			
9.0			0.5	0		SS-2c	0.000	0/ 04.0
9.5			95	0	(1135)	(1155)	0 ppm	%w = 61.9
10.0				0				
10.5				0				
11.0			0.5	0	AD-2c			
11.5			95	0	(1150)		0 ppm	%w = 46.3
12.0				0				
12.5	CLAYEY SAND - light brown, high	00		0				
	moisture, loose, poorly graded, clay - 30%, sand - fine grained - 70%	SC		0	AD-2c			
13.5			75	0	(1120)		0 ppm	%w = 40.8
14.0				0				
	Total Depth = 14 ft.							

 BORING NO.
 AD-2d

 Project
 North Park Lake

 Date Started
 10/7/2002

 Date Completed
 10/7/2002

 Drill Type
 Hollow Stem Auger

 Time
 1310

Sample Method

2" X 2' Split Spoon

Weather

Cloudy 50° F

Drilling Firm
Driller
Inspector
Surface Elevation
Top Sample Elevation
Bottom Sample Elevation
Datum for Surface El.
Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL
956 MSL
945 MSL
NOAH
N 467304.246
E 1343937.497

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5								
1.0								
1.5								
_ 2.0	WATER							
_ 2.5								
3.0								
3.5								
4.0								
4.5				0				
5.0			25	0	AD-2d		0 ppm	%w = 82.2
5.5				0	(1320)			
6.0				0				
6.5				0			0 ppm	
7.0			25	0	AD-2d (1335)		0 ppm	%w = 53.5
7.5				0	(1333)			
8.0				0				
8.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with	CL	95	0	AD-2d (1340)			
9.0	depth			0		CC 24 DC 2	0 ppm	%w = 46.5
9.5				0		SS-2d, PS-2, TS-2		
10.0				0		(1350)		
10.5				0				
11.0			95	0	AD-2d (1345)		0 ppm	%w = 52.5
11.5				0	(1010)			
12.0				0				
12.5				0			0 ppm, TS-	%w = 28.1; LiquidLimit =
13.0	Silty SAND - light brown, high moisture,		95	0			2 VOC sample	23%; Plastic Limit = 16%; Plasticity
13.5	loose, poorly sorted, fines - 39%, sand fine -	SM		0	AD-2d (1350)		taken at 13'	Index = 7%; Specific
14.0	medium grained - 61%			0	(1300)			Gravity = 2.66; and Organic
	CLAY - greenish grey, high moisture, slight plasticity	CL	95	0			0 ppm	Content = 1.6%
15.0	7			0				
15.5	Total Depth = 15'							

BORING NO.	AD-3a	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/4/2002	Inspector	Mark Cruickshank
Date Completed	10/4/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	953 MSL
Time	1420	Bottom Sample Elevation	945 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 80° F	Location	N 467605.550
			E 1343994.969

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5								
1.0								
1.5								
_ 2.0								
2.5								
3.0								
3.5	WATER							
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5				0				
8.0			25	0	AD-3a (1430)		0 ppm	%w = 79.4
8.5				0	(/			
9.0				0				
9.5				0				
10.0			25	0	AD-3a (1435)		0 ppm	%w = 82.8
10.5	CLAY - greenish grey, high moisture, very			0		SS-3a, PS-		
11.0	soft, low plasticity, slight increased density with depth	CL		0		3, TS-3 (1510)		
	Willingspill			0	AD-3a	(1310)		
12.0			75	0	(1445)		0 ppm	%w = 59.1
12.5 13.0				0				
13.5				0			O ppm TC	
14.0				0	AD-3a		0 ppm, TS- 3 VOC	
14.5			60	0	(1510)		sample collected	%w = 62.2
15.0				0			at 13.5'	
	Total Depth = 15 ft.			ı	ı	ı		

Depth Description USCS % Rec. Blow Count Sample I.D. Sample I.D. Readings.	Depth	Description	uscs	% Rec.	Blow Count		•	0 /	Lab Results
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BORING NO. AD-3b North Park Lake Project Date Started 10/4/2002 Date Completed 10/4/2002 Drill Type Hollow Stem Auger Time 1322 2" X 2' Split Spoon Sunny 80° F Sample Method

. Weather

Driller Inspector Surface Elevation Top Sample Elevation Bottom Sample Elevation Datum for Surface El. Location

Drilling Firm

Pennsylvania Drilling Bill Minor Mark Cruickshank 960 MSL 953 MSL 943 MSL NOAH N 467520.051 E 1344232.053

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
_ 2.0								
2.5								
3.0								
3.5	WATER							
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5				0				
8.0			25	0	AD-3b (1330)		0 ppm	%w = 108.9
8.5				0				
9.0				0		•	0 ppm	
9.5				0	AD-3b (1335)			
10.0			50	0				%w = 77.1
10.5				0	(1555)			
11.0				0				
	CLAY - greenish grey, high moisture, very soft, low plasticity, slight increased density	CL		0				
	with depth, trace organic debris, moderate plasticity at 5.5'	OL.	75	0	AD-3b (1345)	SS-3b	0 ppm	%w = 60.6
12.5				0		(1405)		
13.0				0				
13.5				0	45.5			
14.0			95	0	AD-3b (1350)		0 ppm	%w = 37.7
14.5				0				
15.0				0				%w = 26.6;
15.5				0				LiquidLimit = 38%; Plastic
16.0 16.5			75	0	AD-3b		mag 0	Limit = 22%; Plasticity Index = 16%;
	SILTY SAND - greenish grey, moderate moisture, loose, poorly graded, silt - 25%, sand- fine grained - 75%	SM		0	(1356)			Specific Gravity = 2.64; and Organic Content = 2.6%

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
17.5	Total Depth = 17 ft.							

BORING NO.	AD-3c	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/4/2002	Inspector	Mark Cruickshank
Date Completed	10/4/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	953 MSL
Time	1031	Bottom Sample Elevation	947MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 65° F	Location	N 467383.078
			E 1344355.594

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5	WATER						
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5				0			
8.0			25	0			0 ppm
8.5				0			
9.0				0			
9.5	CLAY - greenish grey, high moisture, very			0			
10.0	soft low plasticity slight increased density	CL	25	0		SS-3c (1130)	0 ppm
	with depth			0		, ,	
11.0				0			
11.5				0			
12.0			75	0			0 ppm
12.5				0			
13.0							
13.5	Total Depth = 13 ft.						

BORING NO. AD-3d Drilling Firm Pennsylvania Drilling North Park Lake Driller Bill Minor Project Date Started 10/4/2002 Mark Cruickshank Inspector **Date Completed** 10/4/2002 Surface Elevation 960 MSL Drill Type Hollow Stem Auger Top Sample Elevation 953 MSL Time 0955 Bottom Sample Elevation 949 MSL Sample Method 2" X 2' Split Spoon Datum for Surface El. NOAH Weather Sunny 65° F Location N 467554.320 E 1344490.890

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5	WATER						
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0 7.5				0			
8.0				0			
8.5			25	0			0 ppm
9.0	CLAY - greenish grey, high moisture, very			0		SS-3d	
9.5	soft, low plasticity, slight increased density from 6' to 7'	CL		0		(1020)	
10.0			7-	0			0.5
10.5			75	0			0 ppm
11.0				0			
	Total Depth = 11 ft.						

BORING NO. AD-4a North Park Lake Project 10/8/2002 10/8/2002 Date Started Date Completed Hollow Stem Auger Drill Type Time 2" X 2' Split Spoon Sunny 45° F Sample Method

Weather

Drilling Firm Driller Inspector Surface Elevation
Top Sample Elevation
Bottom Sample Elevation Datum for Surface El. Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL 953 MSL 941 MSL NOAH N 467632.259 E 1344347.416

						E 1344347.4	10	•
Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5	WATER							
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0				0				
7.5				0				
8.0			95	0	AD-4a (1110)		0 ppm	%w = 82.8
8.5				0	, ,			
9.0				5				
9.5				2				
10.0			75	2	AD-4a (1113)		0 ppm	%w = 55.7
10.5		CL		1				
11.0				1				
12.0	CLAY - greenish grey, high moisture, very soft, increased density with depth, 2" section			2	AD-4a			
12.5	with medium grained sand at 7'		75	6	(1120)		0 ppm	%w = 86.8
13.0				18		TS-4 (1140)		
13.5				8		SS-4a, PS-4		
14.0				16	AD-4a	(1150)		
14.5			75	13	(1130)		0 ppm	%w = 49.7
15.0				8				
15.5				6			0 ppm, TS-	
16.0			7-	18	AD-4a		4 VOC	0/ 10 -
16.5			75	20	(1140)		sample collected at	%w = 40.8
17.0				25			16'	
17.5	Silty sandy CLAY - grey, moderate moisture,			5				%w = 28.7; LiquidLimit =
18.0	soft, clay - 28%, silt - 48%, sand - fine to	CL	F0	0	AD-4a		0.5	30%; Plastic Limi = 17%; Plasticity
18.5	medium grained - 24%		50	0	(1150)		0 ppm	Index = 13%; Specific Gravity 2.63; and
19.0				0				Organic Content = 2.3%
	Total Depth = 19 ft.							

BORING NO. AD-4b Drilling Firm Pennsylvania Drilling Bill Minor

Mark Cruickshank
960 MSL North Park Lake Project Driller Date Started 10/8/2002 Inspector 10/8/2002 Hollow Stem Auger Date Completed Surface Elevation Top Sample Elevation
Bottom Sample Elevation Drill Type 951 MSL Time 940 MSL 2" X 2' Split Spoon Sunny 45° F Sample Method Datum for Surface El. NOAH N 467899.013 E 1344375.021 Weather Location

						L 1044010.02		•
Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0	WATER							
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5				0				
10.0			75	0	AD-4b (0930)		0.000	%w = 77.5
10.5			75	0			Оррпі	76W = 77.5
11.0				0				
11.5	CLAY - greenish grey, high moisture, very soft, increased density with depth, trace	CL		5	AD-4b			
12.0	gravel, sections mottled with black clay		95	2			0 ppm	%w = 25.3
12.5			95	2	(0940)		Орріп	70W - 25.5
13.0				1				
13.5				1				
14.0			95	2	AD-4b		0 ppm	%w = 13.8
14.5				6	(1005)	SS-4b	o ppiii	10.0
15.0				18		(1035)		
15.5				8				
16.0	Silty CLAY to clayey SILT w/sand and gravel		95	16	AD-4b		mqq 0	%w = 15.8
16.5	- brown, moderate moisture, medium dense,			13	(1020)		O ppm O ppm O ppm O ppm	
17.0	mottled, cemented, poorly graded, clay - 42%, silt 43%, sand - fine to medium	CL		8				
17.5	grained - 15% and gravel - 0%. Note: percentages from laboratory test, some			6				%w = 16.6;
18.0	gravel size particles were observed.		95	18			0 ppm	LiquidLimit = 29%; Plastic Limit = 17%;
18.5				20	AD-4b		''	Plasticity Index = 12%; Specific
19.0				25	(1030)			Gravity = 2.71; and
19.5			95	5			0 ppm	Organic Content = 1.6%
20.0				0				
20.5	Total Depth = 20 ft.							
			l	l	l	l	l	

BORING NO. AD-4c Drilling Firm Pennsylvania Drilling Project North Park Lake Driller Bill Minor Date Started 10/8/2002 Inspector Mark Cruickshank 10/8/2002 Surface Elevation Date Completed 960 MSL Drill Type Hollow Stem Auger Top Sample Elevation 953 MSL Time 0805 Bottom Sample Elevation 942 MSL Sample Method Datum for Surface El. 2" X 2' Split Spoon NOAH Weather Foggy 40° F Location N 467666.137 E 1344355.209

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5	WATER							
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5			25	0	AD-4c (0820) AD-4c (0825)	SS-4c (0850)	0 ppm	%w = 103.5
8.0		CL		0				
8.5				0				
9.0				0			0 ppm	%w = 55.5
9.5				0				
10.0				0				
10.5				0				
	CLAY - greenish grey, high moisture, very soft, increased density with depth			0				%w = 91.3
11.5				0				
12.0				0	AD-4c (0835)		0 ppm	
12.5				0	-			
13.0				0			0 ppm	
13.5				0				%w = 77.4
14.0			95	0	AD-4c (0840)			
14.5				0	(00.0)			
15.0				0				
15.5				0				
16.0		СН	95	0			0 ppm	
	CLAY - greenish grey, moderate moisture, soft, high plasticity			0	AD-4c (0850)			%w = 26.8
17.0				0				
17.5			95				0 ppm	
HđIBNO	\$tem Auger Boring AD-4c		В	0 oring Logs Page 15				North Cha

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
18.5	Total Depth = 18 ft.							

BORING NO.	AD-4d	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/7/2002	Inspector	Mark Cruickshank
Date Completed	10/7/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	952 MSL
Time	1500	Bottom Sample Elevation	947 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Cloudy 50° F	Location	N 467980.542
			E 1344498.963

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0	WATER						
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0 8.5				0			
9.0				0			
9.5			15	0			0 ppm
10.0				0			
10.5	CLAY - greenish grey, high moisture, low	CI		0		SS-4d	
	plasticity, increased plasticity, density with depth	CL	75	0		(1600)	0.000
11.5			75	0			0 ppm
12.0				0			
12.5			95	0			0 ppm
13.0			90	0			о ррііі
13.5	Total Depth = 13'						

BORING NO.	AD-5a	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/3/2002	Inspector	Mark Cruickshank
Date Completed	10/3/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	951 MSL
Time	0900	Bottom Sample Elevation	948 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Overcast 65° F	Location	N 468405.179
			E 1343868.043

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5	WATER						
5.0							
5.5							
- 6.0							
6.5							
- 7.0							
 							
- 8.0							
— 8.5							
9.0							
9.5				0			
10.0			75	0		SS-5a, SS- 10a (dup)	0 ppm
10.5	CLAY - greenish grey, high moisture, very soft, low plasticity, increased density with	CL		0			- 11
11.0				0	(0920)		
11.5			75	0			0 ppm
12.0			_	0			- F F
12.5	Total Depth = 12 ft.						

BORING NO.	AD-5b	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/3/2002	Inspector	Mark Cruickshank
Date Completed	10/3/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	950 MSL
Time	1000	Bottom Sample Elevation	942 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Overcast 65° F	Location	N 468320.040
			E 1344086.743

- 0.5 - 1.0 - 1.5 - 2.0 - 2.5 - 3.0 - 3.5 - 4.0 - 4.5 - 5.0 - 5.5 - 6.0 - 6.5								
 6.5	WATER							
- 7.0 - 7.5 - 8.0 - 8.5 - 9.0 - 9.5 - 10.0								
10.5				0				
11.0			25	0	AD-5b (1015)		0 ppm	%w = 151.4
11.5				0				
12.0				0				
13.0				0	AD-5b			
13.5			25	0	(1018)		0 ppm	%w = 155.3
14.0 sof	AY - greenish grey, high moisture, very ft, low plasticity, increased density and	CL		0		SS-5b, SS- 10b (dup)		
pla	sticity with depth, decreased moisture h depth	OL		0		(1010)		
15.0	·		95	0	AD-5b		0 ppm	%w = 122.7
15.5				0	(1040)		- 11	
16.0				0				
16.5				1				
17.0			95	0	AD-5b (1050)		0 ppm	%w = 38
17.5				0	(1200)			
18.0	tal Depth = 18 ft.			J				

BORING NO.	AD-5c	Pennsylvania Drilling
Project	North Park Lake	Bill Minor
Date Started	10/3/2002	Mark Cruickshank
Date Completed	10/3/2002	960 MSL
Drill Type	Hollow Stem Auger	950 MSL
Time	1145	940 MSL
Sample Method	2" X 2' Split Spoon	NOAH
Weather	Overcast 70° F	N 468043.342
		E 1344417.377

	L 1044417.377								
Depth	Description	uscs	Blow Count	Geotech Sample I.D.	Chemical	P.I.D.	Lab		
Depth	Description	0505	Blow Count	(time)	Sample I.D. (time)	, Notes	Results		
0.5									
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0	WATER								
5.5									
6.0									
6.5									
7.0									
7.5									
8.0									
8.5									
9.0									
9.5									
10.0									
10.5			0			0 ppm	%w = 105.6		
11.0			0	AD-5c					
11.5			0	(1200)					
12.0			0						
12.5			0						
13.0			0	AD-5c (1205)		0 ppm	%w = 124.8		
13.5			0	(1203)			124.0		
14.0			0						
14.5	CLAY - greenish grey, high moisture, very soft, low plasticity increased density and		0		SS-5c, SS-				
15.0	plasticity with depth, decreased moisture	CL	0	AD-5c (1220)	10c (dup)	0 ppm	%w = 91		
15.5	with depth, clay - 55%, silt - 35%, sand - 9%, 2" sandy clay section at 17.5'		0	(1220)	(1300)				
16.0	, ,		0						
16.5			1						
17.0			0	AD-5c (1230)		0 ppm	%w = 30.3		
17.5			1	(1200)					
18.0			0						
18.5			5				%w = 27.6; LiquidLimit = 46%; Plastic		
19.0			3	AD-5c (1240)		0 ppm	Limit = 25%; Plasticity Index =		
19.5			1	(1240)			21%; Specific Gravity = 2.69; and Organic		
20.0			1				Content = 3.7%		
20.5	Total Depth = 20 ft.								

Depth	Description	uscs	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings . Notes	Lab Results
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BORING NO. AD-5d Project North Park Lake Date Started 10/3/2002 Date Completed 10/3/2002 Drill Type Hollow Stem Auger 1400 Time 2" X 2' Split Spoon Sunny 80° F Sample Method

Weather

Driller Inspector Surface Elevation Top Sample Elevation Bottom Sample Elevation Datum for Surface El. Location

Drilling Firm

Pennsylvania Drilling Bill Minor Mark Cruickshank 960 MSL 952 MSL 944 MSL NOAH N 468051.036 E 1344497.421

	<u> </u>								
Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results	
0.5									
1.0									
1.5	<u> </u>								
_ 2.0	<u> </u> -								
2.5	<u> </u>								
3.0	<u> </u>								
_ 3.5	<u> </u>								
4.0	- WATER								
4.5	<u> </u>								
5.0	<u> </u>								
5.5	 								
6.0									
6.5									
7.0									
7.5									
8.0									
8.5	-		10	0				%w = 145.1	
9.0	-			0	AD-5d (1410)		0 ppm		
9.5	-			0					
10.0				0					
10.5				0					
11.0			10	0	AD-5d (1415)	SS-5d, SS-	0 ppm	%w = 100.9	
	CLAY - greenish grey, high moisture, very soft, low plasticity increased density and			0		10d (dup),			
12.0	plasticity with depth, decreased moisture with depth, 2" sandy clay section at 17.5',	CL		0		PS-5, TS-5, PS-10 (dup),			
	cemented sand at 16', poorly graded			0	AD 5:1	TS-10 (dup) (1500)			
13.0			95	0	AD-5d (1425)		0 ppm	%w = 91.4	
13.5				0					
14.0				0			0 ppm,		
14.5				0	AD-5d		TS-5, TS- 10 (dup)		
15.0			95	20	(1445)		VOC sample	%w = 20.9	
15.5				35			collected at 15.5'		
16.0	_			l	<u> </u>	l	מנוט.ט		

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
16.5	Total Depth = 16 ft.							

BORING NO.	AD-6a	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/2/2002	Inspector	Mark Cruickshank
Date Completed	10/2/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	953 MSL
Time	1420	Bottom Sample Elevation	949 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 80° F	Location	N 469546.776
			E 1342955.350

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5	WATER							
3.0								
3.5								
4.0								
4.5 5.0								
5.5								
6.0								
6.5								
- 7.0								
 				0				%w = 59.2;
8.0			65	1			0 ppm	LiquidLimit = 47%; Plastic
8.5				2			,,	Limit = 22%;
9.0	SILTY CLAY - olive grey, high moisture, soft, moderate plasticity, clay - 47%, silt	CL		3	AD-6a (1445)	SS-6a (1445)		Plasticity Index =
9.5	40%, sand 13%.			2	(1443)	(1443)		25%; Specific Gravity =
10.0			65	2			0 ppm	2.70; and Organic
10.5				3	-			Content = 4.7%
11.0				J				
11.5	Total Depth = 11 ft.							

BORING NO.	AD-6b	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/2/2002	Inspector	Mark Cruickshank
Date Completed	10/2/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	952.75 MSL
Time	1515	Bottom Sample Elevation	947.25 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 80° F	Location	N 469350.595
			E 1343022.279

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5	WATER							
4.0	WAILN							
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5	CLAYEY SILT - greenish grey, high			1				
8.0	moisture, very soft, increased silt towards top, 10 % clay, 90% silt	ML		3	AD-6b			
8.5			50	3	(1530)		0 ppm	%w = 59.2
9.0				4				
9.5				3		SS-6b		%w = 34.5;
10.0	Silty CLAY - greenish grey, moderate	01	0.5	4		(1545)		LiquidLimit = 42%; Plastic
10.5	moisture, soft to firm, high plasticity, trace silt, clay - 44%, silt - 42%, sand 14%.	CL	85	4	AD-6b		0 ppm	Limit = 23%; Plasticity Index = 19%;
11.0				4	(1545)			Specific Gravity =
11.5			0.5	7			0.000	2.68; and Organic Content =
12.0			85	5			0 ppm	4.1%
12.5 —	Total Depth = 12.25 ft.							

BORING NO. Drilling Firm Pennsylvania Drilling AD-6c North Park Lake Driller Bill Minor Project Date Started 10/2/2002 Inspector Mark Cruickshank **Date Completed** 10/2/2002 Surface Elevation 960 MSL 951 MSL Drill Type Hollow Stem Auger Top Sample Elevation Bottom Sample Elevation Datum for Surface El. Time 1605 944 MSL Sample Method 2" X 2' Split Spoon NOAH Weather Sunny 80° F N 469197.804 Location E 1343252.276

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.5								
3.0								
3.5								
4.0								
4.5	WATER							
5.0								
5.5								
6.0								
6.5								
7.0								
7.5 8.0								
8.5								
9.0								
9.5				0				
10.0	CLAYEY SILT - greenish grey, high	011	7.5	0	AD-6c		0	
	moisture, soft, high plasticity, increased density with depth, upper 1' very soft	СН	75	4	(1615)		0 ppm	%w = 74.5
11.0				1				
11.5	CLAVEY CAND/serval . Esht has			0				
— _{12.0}	CLAYEY SAND w/gravel - light brown, moderate moisture, loose, modrately	SC	75	1	AD-6c		0 ppm	%w = 18.2
12.5	graded, clay - 28%, silt - 20%, sand fine to coarse grained - 42%, gravel - 10%	00	70	4	(1645)	SS-6c	орри	7011 - 1012
13.0				6		(1715)		
13.5				50/refusal			0 ppm, collected	%w = 19.5;
14.0							geotech/ chem	LiquidLimit = 34%; Plastic Limit = 19%;
14.5	CLAY - green, slightly moist, stiff, refusal with hammer at 4',	CL	10		AD-6c (1710)		sample from	Plasticity Index = 15%;
15.0	with natifile at 4,				(1710)		augers due	and Organic
15.5							to refusal of split	Content = 3.5%
16.0							spoon	
16.5	Total Depth = 16 ft.							

BORING NO.	AD-6d	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/2/2002	Inspector	Mark Cruickshank
Date Completed	10/2/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	952 MSL
Time	1735	Bottom Sample Elevation	948 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 80° F	Location	N 468480.759
			E 1343816.516

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0	WATER						
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0				0			
8.5							
9.0			75	0	•		0 ppm
9.5	CLAY - greenish grey, high moisture, very	CL		0	•	SS-6d	
	soft, low plasticity	CL		1	•	(1745)	_
10.5					•	PS-6, TS-6 (1745)	Oppm TS 6
11.0			80	2			0 ppm, TS-6 VOC sample
11.5	CLAYEY SAND - dark brown, moderate						collected at 11'
 12.0	moisture, loose, poorly graded, 5% clay, 95% medium grained sand	SC		1			
	Total Depth = 12 ft.			_	_	_	

BORING NO.	AD-7a	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/2/2002	Inspector	Mark Cruickshank
Date Completed	10/2/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	956 MSL
Time	1000	Bottom Sample Elevation	952 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 65° F	Location	N 469976.384
			E 1342720.690

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0	WATER							
2.5								
3.0								
3.5								
4.0								
 4.5	SILTY CLAY - olive grey, high moisture, very soft, low plasticity, 35% silt, 65 % clay	CL		8				
5.0			40	12	AD-7a (1015)		0 ppm	%w = 14.8
5.5				16	, ,			
6.0	Gravelly clayey SAND to sandy clayey GRAVEL - reddish orange, moderate			15		SS-7a (1015)		
6.5	moisture, dense, well graded, gravel - 36%, sand fine to coarse grained - 36%, silt -	SC - GC		13		, ,		%w = 16.2; LiquidLimit =
7.0	_		75	11	AD-7a		0 ppm	31%; Plastic Limit = 18%; Plasticity Index =
7.5			70	10	(1025)		Оррии	13%; Specific Gravity = 2.81; and Organic
_{8.0}				16				Content = 2.1%
 8.5	Total Depth = 8 ft.							
9.0								
9.5								
10.0								

BORING NO.	AD-7b	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/2/2002	Inspector	Mark Cruickshank
Date Completed	10/2/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	955 MSL
Time	0910	Bottom Sample Elevation	952 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 65° F	Location	N 470172.025
			E 1342791.996

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5	WATER							
3.0								
3.5								
4.0								
4.5								
5.0	0117							
 5.5	SILT - greenish grey, high moisture, very soft, non plastic	OL		1				%w = 43.2; LiquidLimit =
_{6.0}			60	2			0 ppm	38%; Plastic Limit = 20%;
6.5	Silty CLAY to clayey SILT w/sand - greenish			2	AD-7b	SS-7b (MS/MSD)		Plasticity Index = 18%; Specific
_{7.0}	grey, high moisture, soft, low plasticity, clay - 38%, silt 47%, sand - 14%	CL		1	(0925)	(0925)		Gravity = 2.65; and
7.5	30%, Siit 47%, Sanu - 14%		85	2			0 ppm	Organic Content =
_{8.0}			00	1			Оррін	4.4%
8.5	Total Depth = 8 ft.							
9.0								
9.5								
10.0								

BORING NO.	AD-7c	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/2/2002	Inspector	Mark Cruickshank
Date Completed	10/2/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	956 MSL
Time	0800	Bottom Sample Elevation	952 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 65° F	Location	N 470321.949
			E 1342929.874

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
_ 2.0	WATER							
2.5								
3.0								
3.5								
4.0								
4.5				2				
5.0	CLAY - yellowish orange, moderate moisture, soft, high plasticity	СН	85	2	AD-7c		0 ppm	%w = 22.8
5.5			00	3	(0810)		o pp	70
				4		SS-7C		
 6.5	CLAYEY SAND - yellowish orange, high			8		(0830)		%w = 20.1; LiquidLimit =
- 7.0	moisture, medium dense, poorly graded, clay - 20%, silt - 29%, sand fine to medium	SC	80	5	AD-7c		0 ppm	26%; Plastic Limit = 25%; Plasticity Index =
7.5	grained - 50%, gravel - 2%.		00	4	(0820)		Оррін	11%; Specific Gravity = 2.66;
8.0				3				and Organic Content = 1.4%
8.5	Total Depth = 8 ft.							
9.0								
9.5								
10.0								
	<u>.</u>							

BORING NO.
Project
Date Started
Date Completed
Drill Type
Time
Sample Method

Weather

AD-7d
North Park Lake
10/2/2002
10/2/2002
Hollow Stem Auger
1220
2" X 2' Split Spoon
Sunny 75° F

Drilling Firm
Driller
Inspector
Surface Elevation
Top Sample Elevation
Bottom Sample Elevation
Datum for Surface El.
Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL
953 MSL
950 MSL
NOAH
N 469577.900
E 1343093.388

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
1.5								
2.5								
3.0								
3.5 4.0	WATER							
4.5								
5.0								
5.5								
6.0 6.5								
7.0								
7.5				1			0 ppm, TS-7	%w = 97.5; LiquidLimit =
8.0			25	1		SS-7d	VOC sample	59%; Plastic Limit = 25%; Plasticity
8.5	SILTY CLAY w/trace sand - olive green, high moisture, very soft, moderate-high	СН		1	AD-7d (1255)	(1255) PS- 7, TS-7	collected	Index = 34%; Specific
9.0	plasticity, clay - 62% silt 32% sand - 5%.			1	(1233)	(1255)	at 8.5'	Gravity = 2.68; and
9.5			25	1			0 ppm	Organic Content =
10.0				1				4.2%
10.5	Total Depth = 10 ft.							

BORING NO.	AD-8a	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/1/2002	Inspector	Mark Cruickshank
Date Completed	10/1/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	955.75 MSL
Time	1128	Bottom Sample Elevation	953.75 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Partly Cloudy, 75° F	Location	N 470891.366
	<u> </u>		E 1342266.549
			

						L 1042200.0	10	
Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
_ 2.0	WATER							
_ 2.5	WATER							
_ 3.0								
_ 3.5								
4.0								
4.5	Silty CLAY to clayey SILT w/sand and			1				
5.0	gravel - olive green, high moisture, very	CL		1				%w = 36.5; LiquidLimit = 40%; Plastic
5.5	soft, moderate plasticity, clay 35%, silt 40%, sand 18%, gravel 7%.		90	2	AD-8a (1215)	SS-8a (1215)	0 ppm	Limit = 20%; Plasticity Index = 20%; Specific
6.0	CLAYEY SAND - olive grey, high moisture, medium dense, clay -15%, poorly graded fine grained sand - 90%	SC		4	(1210)	(1210)		Gravity = 2.67; and Organic Content = 3.0%
6.5	Total Depth = 6.25 ft.							
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0								

BORING NO.	AD-8b	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/1/2002	Inspector	Mark Cruickshank
Date Completed	10/1/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	955.5 MSL
Time	1415	Bottom Sample Elevation	953.5 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Partly Cloudy 80° F	Location	N 470742.319
			E 1342273.002

						2 10 122 10:00	
Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
_ 2.0							
2.5	WATER						
_ 3.0							
3.5							
4.0							
4.5							
5.0	CLAY - olive grey, high moisture, soft, high			1			
5.5	plasticity	CH		1		SS-8b	
6.0			80	1		(1430)	0 ppm
 6.5	CLAYEY SAND - olive grey, moderate moisture, loose, poorly graded, clay - 15%, fine grained sand - 85%	SC		1			
- 7.0	Total Depth = 6.5 ft.						
 							
_ 8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	AD-8c	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/1/2002	Inspector	Mark Cruickshank
Date Completed	10/1/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	955 MSL
Time	1506	Bottom Sample Elevation	953 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Partly Cloudy 80° F	Location	N 470656.364
			E 1342389.990

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5	WATER						
3.0							
3.5							
4.0							
4.5							
5.0							
5.5				2	•		
6.0	CLAY - olive grey, high moisture, soft, high plasticity, trace sand at lower 2"	СН	75	2	•	SS-8c (1515)	0 ppm
6.5	plasticity, trace sand at lower 2			1		(1515)	
7.0				2			
7.5	Total Depth = 7 ft.						
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	AD-8d	Drilling Firm	Pennsylvania Drilling
Project	North Park Lake	Driller	Bill Minor
Date Started	10/1/2002	Inspector	Mark Cruickshank
Date Completed	10/1/2002	Surface Elevation	960 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	955 MSL
Time	1545	Bottom Sample Elevation	953 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 80° F	Location	N 470523.336
			E 1342544.246

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
- 0.5 - 1.0 - 1.5 - 2.0 - 2.5 - 3.0 - 3.5 - 4.0 - 4.5 - 5.0	WATER						
5.5 6.0	CLAY - olive grey, high moisture, soft, high plasticity	СН		1		SS-8d (1600)	0 ppm, TS- 8 VOC
6.5 7.0	CLAYEY SAND - light brown, high moisture, slightly graded, loose, clay - 25%, fine to medium grained sand - 75%	SC	75 SC			PS-8, TS-8 (1610)	sample collected at 6.5'
7.5 8.0 8.5 9.0 9.5 10.0	Total Depth = 7 ft.						

BORING NO.	AD-9a	Drilling Firm	Pennsylvania Drilling
Project	Marshall Lake	Driller	Bill Minor
Date Started	10/9/2002	Inspector	Mark Cruickshank
Date Completed	10/9/2002	Surface Elevation	989 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	984 MSL
Time	1110	Bottom Sample Elevation	982 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 60° F	Location	N 473975.474
			E 1338461.827

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5	•						
2.0							
2.5	WATER						
3.0							
3.5							
4.0							
4.5							
5.0							
5.5				0			
6.0	CLAY - grey, high moisture, soft, moderate plasticity, 15% organics in upper 1", 5%	CL	25	0		SS-9a (MS/MSD)	0 ppm
6.5	gravel to 2"			0		(1145)	• pp
7.0				0			
7.5	Total Depth = 7 ft.						
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	AD-9b	Drilling Firm	Pennsylvania Drilling
Project	Marshall Lake	Driller	Bill Minor
Date Started	10/9/2002	Inspector	Mark Cruickshank
Date Completed	10/9/2002	Surface Elevation	989 MSL
Drill Type	Hollow Stem Auger	Top Sample Elevation	979 MSL
Time	1210	Bottom Sample Elevation	974 MSL
Sample Method	2" X 2' Split Spoon	Datum for Surface El.	NOAH
Weather	Sunny 60° F	Location	N 474023.628
			E 1338467.749

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0	WATER							
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0				0				
10.5				0				
11.0			25	0	AD-9b (1220)		0 ppm	%w = 50.3
11.5				0	(- 7			
	Silty sandy CLAY to clayey sandy SILT - grey, high moisture, very soft, low plasticity,			0		SS-9b		
12.5	15% organics in upper 1", clay - 25%, silt -	CL		0		(MS/MSD)		%w = 34.9;
	37%, sand fine to medium - 36%, gravel to 2" - 2%.		95			(1230)	0 ppm	LiquidLimit = 30%; Plastic
13.5				0	AD-9b (1225)			Limit = 20%; Plasticity Index = 10%; Specific
14.0				0	(1223)			= 10%; Specific Gravity = 2.72; and Organic
14.5			95	0			0 ppm	Content = 2.3%
15.0				U				

	Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings , Notes	Lab Results
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Hollow Stem Auger Boring AD-9b Boring Logs North Park Lake Sediment Page 34 Characterization Report

BORING NO. Drilling Firm Pennsylvania Drilling AD-9c Project Marshall Lake Driller Bill Minor Date Started 10/9/2002 Inspector Mark Cruickshank **Date Completed** 10/9/2002 Surface Elevation 989 MSL Drill Type Hollow Stem Auger Top Sample Elevation 979 MSL Time 1245 Bottom Sample Elevation 975 MSL Sample Method 2" X 2' Split Spoon Datum for Surface El. NOAH Weather Sunny 60° F Location N 474058.152 E 1338484.628

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0	WATER						
5.5							
6.0							
- 7.0							
 							
 8.0							
8.5							
9.0							
9.5							
10.0							
 10.5				0			
11.0	CLAY - grey, high moisture, very soft, low	CL	25	0			0.000
11.5	plasticity	CL	25	0		TS-9	0 ppm
_{12.0}				0		(MS/MSD) (1255)	
12.5				0		SS-9c (MS/MSD)	
	SILTY SAND WITH GRAVEL - dark grey, high moisture, loose, moderately graded,	SM	0.5	0		(1310)	0 ppm, TS-9 VOC
13.5	silt - 20%, gravel - 8% (< 2cm), sand - fine		25	0			collected at 13.5'
14.0				0			13.3
	Total Depth = 14 ft.			ı	ı	L	

BORING NO. AD-9d Drilling Firm Pennsylvania Drilling Project Marshall Lake Driller Bill Minor Date Started 10/9/2002 Inspector Mark Cruickshank 10/9/2002 Date Completed Surface Elevation 989 MSL Hollow Stem Auger 979 MSL Drill Type Top Sample Elevation Bottom Sample Elevation 976 MSL Time 1310 2" X 2' Split Spoon Datum for Surface El. Sample Method NOAH Weather Sunny 60° F Location N 474111.038 E 1338387.037

Depth	Description	uscs	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0	WATER						
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							
10.0				0			
	SILTY CLAY - grey, high moisture, very soft, low plasticity, silt - 25%, clay - 75%	CL		0			
11.0			95	0			0 ppm
11.5	SILTY CLAYEY SAND - dark grey, high			0		SS-9d, PD- 9d (1350)	
	moisture, loose, poorly sorted, silt - 10%, clay - 15%, sand - fine to medium grained -	SC		0			
	75%		95	0	-		0 ppm
13.0							
13.5	Total Depth = 13 ft.						